True Facts

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Preface

This book's primary objective is to educate you about difficult/non-obvious (but nonetheless important) facts about the universe that you live in. This book is written with the spirit that you, monkeys, are able to learn. This book is also highly anticipated:

> "**Al-Caveman:** RobbieAB|work, would u read my book? **RobbieAB|work:** Depends how bored I am. **Al-Caveman:** ok. i take that as *yes*."
> — Freenode/#gentoo-chat-exile, 2015

> "**Al-Caveman:** DistantStar, u? **DistantStar:** okay. **Al-Caveman:** perfect." — Freenode/#gentoo-chat-exile, 2015

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Chapter 1

History

You really must read this chapter. You can't just jump around to other sections while expecting that you know what's going on. Okay maybe you can, but if you jump around then you are effectively most likely performing a less efficient use of your time than if you heed my advise.

1.1   The Past

There are multiple possible reasons why you exist, but the one that is easiest to explain by monkeys like you (which is not necessarily the true one) is one that tries to minimize the role of miracles/magic. Turns out that your fellow monkeys found one that they think it minimizes that, and they decided to call it *"evolution"*, and it looks exactly like this:

Algorithm 1 The algorithm that made you.

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    for $1 \dots t$ **do**
       randomize(U)
    end for

Where t is the total number of clock ticks, U is the set of all elements of the universe, and randomize is a function that randomly transforms elements in U based on some distribution that I'll touch later. For any $\mathbf{x} \in \mathbf{U}$, $\mathbf{x}$ is a vector whose components describe exactly the perfect state of element x.

The reason you exist is because Allah[1] decided to execute Algorithm 1

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[1] This material is not religion-oriented. Feel free to put your favorite God there including *none*.

such that t is a large enough number, and the distribution that the function randomize adheres to is a special one that permits your kind to exist.

No monkey (or group of monkeys) is known to fully know the distribution that randomize tries to maintain, but some have figured out a few consistent rules that this distribution seems to stick to, which the monkeys decided to call "*Laws of Physics*".

For example, imagine some particular state of the universe (i.e. a point in time where the vectors in U have particular values) where there is an apple atop the surface of planet earth by a few meters. In this particular configuration, the function randomize will modify the values of elements of U as the clock advances such that the apple and earth will achieve a shorter euclidean distance between them until they hit each other. Once they hit each other, then other consistent patterns happen that the monkeys have figured out.

Hundreds of years ago, monkeys were thinking/conjecturing that this distribution is fully deterministic. I.e. the way randomize will transform the elements in U in the future (i.e. next clock tick) is fully dependant on the current values in U at the present time (i.e. current clock tick).

Later on, some other monkeys (that stood on the shoulders of previous giant monkeys), suggested that there might be some intrinsic randomness inside the function randomize that we can never fully know. At that time, some yet other monkeys didn't like this idea and said things like "*God doesn't play dice*".

But before we answer whether the function randomize has an intrinsic randomness that no one can predict (i.e. beyond the information in U of a previous time), we need to know what is randomness? Do you know any algorithm that perfectly tells you if a number sequence is random for everyone (i.e. universally random and not relevant to the observer)?[2].

1.2   The Present

The specific configuration of elements in U at some point in time between 1 and t as configured by Algorithm 1. I am pretty sure it's not 1, and I feel (at the time of writing this) that it's not t either. I can confirm now that it wasn't t back then.

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[2]A monkey named **_anomaly_** in Freenode's #gentoo-chat-exile claimed "*yes*", but then he retreated as he failed to find an algorithm that does that. He then claimed that he is not a mathematician. But somehow he dares to make claims about mathematics.

1.3   The Future

The specific configuration of elements in U as configured by Algorithm 1 when the clock tick is a number that is greater than the number of the clock tick of some reference point that you consider the "*present*". Many monkeys call this the "*future*".

Chapter 2

Good and Bad